

Claims 1-7 are cancelled.

8. (Withdrawn) A method of extruding a polymeric sheet, comprising the steps of:
heating and extruding a polymeric sheet having a predetermined thickness to provide a soft and heat-plastified sheet of uniform thickness;
controllably introducing said heated, soft and heat-plastified polymeric sheet into a gap extending between a pair of adjacent cooling rolls;
measuring the thickness of said gap directly and without reflection between said adjacent cooling rolls, by aiming a laser beam into and through said gap to fall upon a corresponding laser detector;
comparing the measured gap thickness to a desired gap thickness;
adjusting said gap thickness by linear displacement of said cooling rolls, in response to said measured gap thickness and said desired gap thickness; and
wherein said cooling rolls are adjusted to exert minimal pressure on said softened and heat-plastified polymeric sheet to cool the same.

9. (Withdrawn) The method of claim 8, further comprising the step of maintaining the pressure of said rolls between about 20 and 1000 pounds per linear inch of roll width throughout the sheet cooling period.

10. (New) An apparatus for extruding and cooling polymeric sheet materials, said apparatus comprising:
a polymer sheet extruder producing polymeric sheets of predetermined thickness;
a plurality of cooling rolls positioned downstream of a heating device, a gap between said cooling rolls being positioned in concert with said extruder for introducing said sheet into said gap, each said cooling roll having a longitudinal axis of rotation and being capable of cooling a polymeric sheet produced by said extruder;
a positioning device connected to at least one of said rolls, said positioning device being mounted for selective positioning with respect to another of said cooling rolls;
a laser source connected for measuring directly and without reflection, and while said sheet is processed through said gap, the thickness of said gap, said laser source being aimed in said machine direction and emitting a laser beam aimed and arranged for transmitting a beam of laser light into and directly through said gap;

a corresponding laser beam detector positioned and aimed in line with said gap on a side of said cooling rolls opposite to said laser source for non-reflectively measuring, while said sheet is processed through said gap, the amount of laser light passing directly through said gap;

a measuring and comparison device for comparing said measured value to a desired value corresponding to a desired gap width; and

a controller responsive to said measured value for controlling said gap distance through selective linear roll displacement;

wherein at least one of said cooling rolls has at least one end portion with a diameter less than the diameter of the roll portion having said extruded sheets thereon to provide space through which said laser beam can be sighted.

11. (New) The apparatus of claim 10 wherein said smaller diameter end portion is a separate component affixed to said roll.

12. (New) The apparatus of claim 10 wherein a plurality of gaps are present, each with a laser source and a laser detector, and wherein each said laser source emits a laser beam, and its corresponding laser source and its corresponding laser detector are located at opposite sides of said gap between said adjacent rolls.

13. (New) The apparatus of claim 10 comprising three cooling rolls arranged in a stack.

14. (New) The apparatus of claim 13 wherein said cooling rolls are arranged in a stack which is oriented in a vertical orientation.

15. (New) The apparatus of claim 13, wherein said rolls are arranged in a cooling stack which is oriented in a horizontal position.

16. (New) The apparatus of claim 13, wherein said rolls are arranged in a cooling stack which is angled between a horizontal and a vertical orientation.

17. (New) The apparatus of claim 16 wherein only the middle of the three cooling rolls has one or more smaller diameter end portions.

18. (New) The apparatus of claim 16, wherein said laser source and said corresponding laser detector are positioned adjacent two adjacent cooling rolls, and oriented physically to measure directly said gap therebetween.

19. (New) The apparatus of claim 10 wherein the positioning device comprises a pneumatic pressure system.

20. (New) The apparatus of claim 10 wherein the positioning device comprises a hydraulic pressure system.